

Appendix A – Summary of Options

	Option 1: Initial scope as set out in the Prospectus	Option 2: Initial scope plus registration	Option 3: Initial scope plus registration plus data processing
Core option	<p>This option represents the minimum change to industry systems that would allow DCC to provide centralised communications access to smart meters (all domestic sites and non-domestic where the supplier has elected to use DCC).</p>	<p>Under this option DCC performs all the activities shown in the 'initial scope' option in the Prospectus, plus registration.</p> <p>Registration is defined as the process that maps a physical network exit point (i.e. MPAN or MPRN) to a metering system and to the registered supplier.</p> <p>With this option the DCC would eventually hold the master data for all meter registration.</p>	<p>This option builds on Option 2 by adding data processing functions, namely:</p> <ul style="list-style-type: none"> Data verification functions and the calculation of EAC/AQ to DCC (from Data Collectors); Aggregation of consumption volumes to provide input data for settlement (from Data Aggregators). <p>The DCC will maintain a central repository of meter readings and derived information which can be accessed (subject to access rules) by all industry parties.</p>
Sub options		<p>2A: Initial activities cover smart metering registration only. Registration of all meters will migrate to DCC when the majority of installed meters are smart (assumed by 2018).</p> <p>2B: DCC's registration activities cover all sites from DCC Go Live.</p> <p>2C: DCC initially has no registration capability. At some point after DCC go-live (probably 2-3 years) the DCC's functions would be extended to include registration for all meters.</p> <p>2D: This option is the same as 2B but with support for legacy data flows until 2018.</p>	<p>3A: Initial registration and data processing only covers smart meters. Registration of all meters will migrate to DCC when the majority of installed meters are smart (assumed by 2018). Data processing functions are only undertaken for Smart Meters.</p> <p>3B: Registration activities cover all sites from DCC Go Live. Data processing functions are undertaken for Smart Meters only.</p> <p>3C: As 3B but the registration and data processing functions do not come into operation until some period (perhaps 1-2 years) after DCC go-live.</p> <p>3D: As 3B but with support for legacy data message sets.</p>

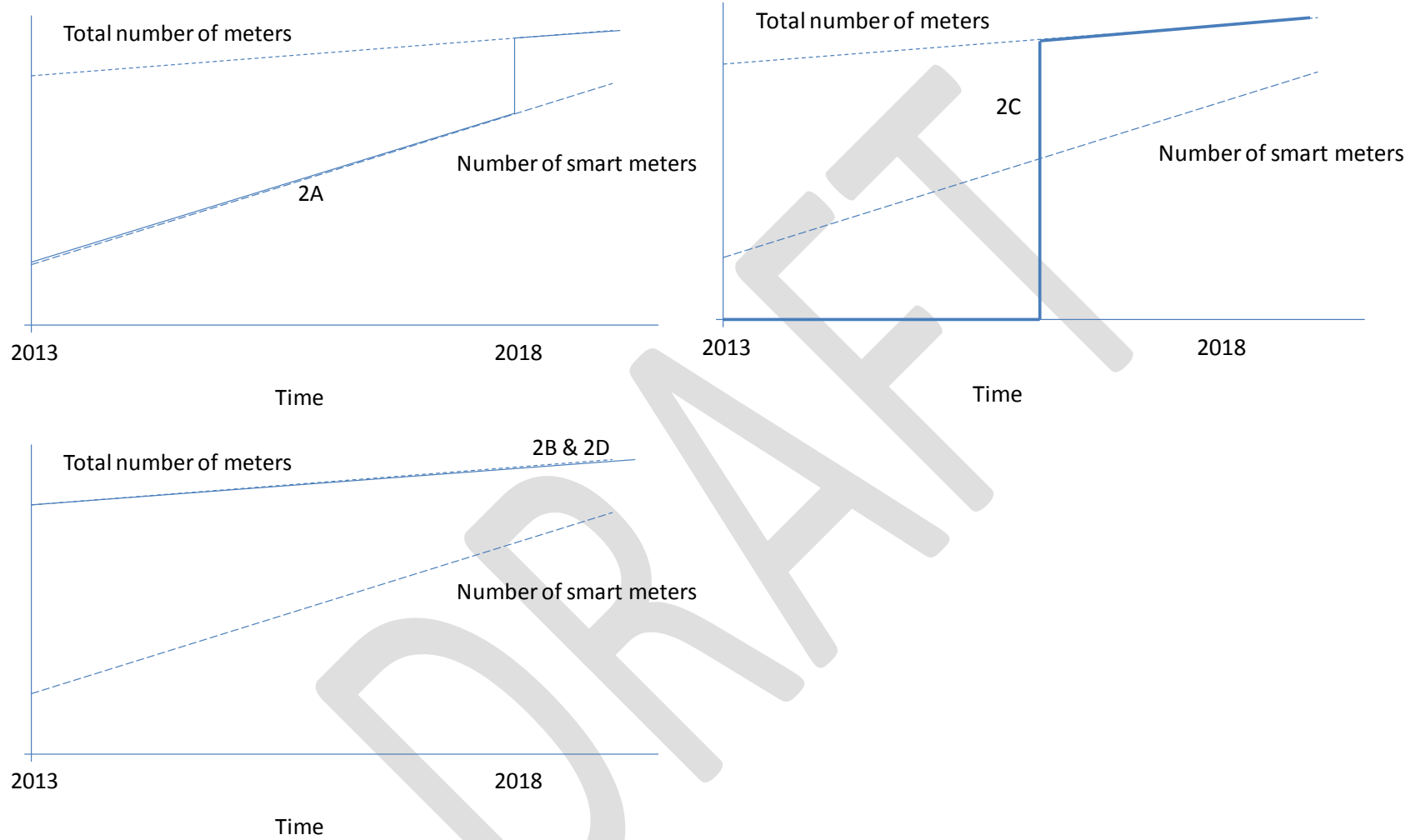


Figure 1: Comparison of Option 2 sub-option timings

Appendix B – Option Descriptions

B.1: Option 1: Initial scope

Option 1 – The ‘Initial Scope’ Option as set out in the Prospectus	
Overview	<p>This option represents the minimum change to industry systems that would allow DCC to provide centralised communications access to smart meters (all domestic sites and non-domestic where the supplier has elected to use DCC).</p> <p>With this option the DCC would act as the Meter Read Agency / Data Retriever for smart meters.</p> <p>The baseline against which future changes should be assessed is the ‘as is’ arrangements in both electricity and gas as at 2010.</p>
Services supported	All services listed in the Service Catalogue will be supported.
DCC Activities	<p><i>Secure access control:</i></p> <p>Suppliers (and their agents), network operators and ESCOs will submit service requests which will be validated by DCC. Suppliers will be allowed to access meter points for which they are the registered supplier; agents will be allowed to access meter points for which the supplier has granted them access; network operators will be allowed to access meter points within their distribution areas; ESCOs will need authorisation from the customer to access a specified meter. Each type of service user will be restricted to a designated set of service requests (e.g. network operators will not be permitted to submit top-ups to a PAYG meter).</p> <p><i>Translation:</i></p> <p>Service requests will be transmitted to DCC via agreed market messages: it is assumed that these will be carried over a new messaging infrastructure operated by DCC. DCC will operate translation software supplied by meter manufacturers to translate these requests into the proprietary format used by the specified meter. Data received from meters will be translated back into standard market messages for onward transmission to service users.</p> <p><i>Scheduled data retrieval:</i></p> <p>Service users may submit to DCC a schedule of regular transactions (e.g. monthly meter reads) that DCC will execute. Service users may also submit ‘diarised events’ (e.g. to update tariffs on a specified date, to perform routine firmware upgrades) which DCC will execute in line with SLAs.</p> <p><i>Network management:</i></p> <p>As part of its operational management, DCC will also manage traffic to/from meters and to/from service users to as to optimise its use of comms networks: this may require it to ‘buffer’ data received from meters for onward transmission to service users. For example, data may be buffered until a confirmation has been received from the recipient. DCC will perform security monitoring to provide</p>

Option 1 – The ‘Initial Scope’ Option as set out in the Prospectus

	<p>continual assurance of the integrity of the WAN.</p> <p><i>Reporting, invoicing and financial management:</i></p> <p>DCC will require a suite of ‘internal’ systems to allow it to manage its operations. These systems will include the preparation of service invoices and management information (e.g. to monitor performance against SLAs), and processing DCC financial transactions and administration. These systems may need to store certain transaction records to allow verification of its charges.</p>
Source of supplier registration data	<p>Under this option DCC will not operate its own supplier registration system and will need to access meter point / supplier registers from external information providers. For electricity, DCC will need to access either the ECOES (electricity) database that provides a ‘window’ into the registration systems operated by DNOs or to access the DNO registration systems directly. For gas, DCC will need to access the registration data managed by GT’s agent and IGTs.</p>
Change of Supplier / Tenancy arrangements	<p>The existing CoS/CoT procedures will remain broadly unchanged. The meter point record will need to identify that a smart meter has been installed and is being read by DCC rather than by a traditional Data Collector.</p>
New connections and disconnections	<p>The existing procedures for issuing MPAN/MPRNs will remain broadly unchanged. All new connections will be fitted with a smart meter. The meter point record will need to identify that a smart meter has been installed and is being read by DCC rather than a traditional Data Retriever.</p>
Settlements	<p>The existing settlement procedures will remain in operation.</p>
Pay As You Go	<p>DCC will support the PAYG services listed in the Services Catalogue. Suppliers will transmit PAYG messages to DCC and be responsible for recording whether a smart meter is operating in PAYG or credit mode: they will also be responsible for ensuring that PAYG messages (e.g. top-ups) are only sent to meters operating in PAYG mode.</p>
Metering agents	<p>The ‘supplier hub’ principle will continue to apply with suppliers deciding whether to appoint third party agents or to perform activities through internal business units. Accordingly the DCC may receive service requests either from suppliers or their agents.</p>
Market Messaging	<p>A new market messaging solution will be developed by DCC to handle all messages passed between DCC and service users. The existing market message systems (DTN & iX) will continue to be used for existing data flows (e.g. change of supplier requests) although changes will be required to some message schemas to add new data items.</p>
Smart grid	<p>Services to be supported under this option will comprise:</p>

Option 1 – The ‘Initial Scope’ Option as set out in the Prospectus

functions	<ul style="list-style-type: none"> • Ad hoc power quality reads (single or aggregate values) • Transfer of alarms to network operators
Industry data for which DCC will hold the master record	<p>Access control information (including type and level of access allowed to each organisation for each meter and associated consent information)</p> <p>Details of all sites where there is at least one smart meter, containing:</p> <ul style="list-style-type: none"> • The communications address of the WAN communications unit; • The devices attached to this node; • Technical details of each device that are essential for DCC operations (e.g. ‘head-end’ type); • The ‘lead supplier’ for the site (i.e. gas or electricity); <p>Message Log for all messages received/transmitted (and messages which fail authentication) excluding transaction data (e.g. meter readings)</p>
Data Migration	In this option there will be no mass migration of data to DCC from the existing registration systems. Sites/devices will be added to DCC’s database as and when meters are installed and a ‘bulk load’ facility may be required to transfer early meters from the interim arrangement
Treatment of ‘early smart’ meters	‘Early smart’ meters will have been recorded in the appropriate registration system at the time they were installed. An ‘early smart’ meter will only be entered into the DCC database when it starts to communicate via DCC (rather than direct to the supplier). Only those ‘early smart’ meters which comply with the approved technical specification will be eligible for adoption by DCC.
Non-domestic customers	DCC will only act as the communication services provider for non-domestic customers if the supplier elects to use DCC. As for domestic customers, if the supplier uses DCC then DCC will be recorded in the meter point register as the appointed data retriever. If the supplier decides to arrange their own communications service then the data retriever agent field will be coded to reflect this.
Security standards	End to end security between the DCC and the communications module / smart meter is critical. In conjunction with the WAN Services Provider the DCC provider must ensure that appropriate security mechanisms are in place, inter-alia, to protect the confidentiality and integrity of information exchanged with suppliers, third parties, communications modules, meters and other devices within the premise; to authenticate the source of all messages received by the DCC and to ensure that messages issued by the DCC can be authenticated by any party that receives them.
Other features	It should be noted that the DCC will need to support new market entities, such as ESCOs, as well as existing market entities.

B.2: Option 2: Initial scope plus registration

Option 2 – Initial scope plus registration				
Overview	<p>Under this option DCC performs all the activities shown in the 'initial scope' option in the Prospectus, plus registration.</p> <p>With this option the DCC would act as the Meter Read Agency / Data Retriever for smart meters and by the end of the transition period (2018 TBC) will be responsible for the registration of all meters, both Smart and traditional.</p> <p>Registration is defined as the process that maps a physical network exit point (i.e. MPAN or MPRN) to a metering system and to the registered supplier in the settlement system. The DCC will be responsible for:</p> <ul style="list-style-type: none"> • Initial registration of new sites (including against a new Site Identifier) and network exit points; • For associating suppliers and metering systems with network exit points; • For maintaining the accuracy of the data in the registration system; • For making information in the registration system available to authorised parties. <p>The baseline against which future changes should be assessed is the 'as is' arrangements in both electricity and gas as at 2010.</p>			
Sub options	<p>2A: Phased transition: The initial DCC registration activities will cover smart meters sites only. Sites would only fall within DCC's scope when a smart meter is installed and legacy arrangements will continue to operate for sites with traditional meters. Over time the number of traditional meters will decline (i.e. 'withering on the vine'). Under this option all sites (including I&C and unmetered) remaining in the legacy registration systems will be migrated to DCC when a significant majority of domestic sites have smart meters (e.g. in 2018).</p>	<p>2B: Immediate transition: DCC's registration activities will cover all sites from DCC Go Live. This will require a mass migration (and data cleansing) of registration data to DCC prior to DCC Go Live and will require legacy processes (e.g. CoS/CoT) to be modified to follow streamlined CoS/CoT processes from that date.</p>	<p>2C: Delayed transition: at go-live will have no registration capability (i.e. it would be the same as for Option 1) but would move to full registration of all meters (smart and traditional) after a period of time, perhaps 2-3 years – meaning that the end state would be reached before Option 2A but later than Option 2B.</p>	<p>2D: Immediate transition with legacy support: As option 2B with support for legacy data flows for initial period (to 2018 TBC)</p>

Option 2 – Initial scope plus registration

Services supported	All services listed in the Service Catalogue will be supported.
DCC Activities	<p><i>Secure access control:</i></p> <p>Suppliers (and their agents), network operators and ESCOs will submit service requests which will be validated by DCC. Suppliers will be allowed to access meter points for which they are the registered supplier; agents will be allowed to access meter points for which the supplier has granted them access; network operators will be allowed to access meter points within their distribution areas; ESCOs will need authorisation from the customer to access a specified meter. Each type of service user will be restricted to a designated set of service requests (e.g. network operators will not be permitted to submit top-ups to a PAYG meter).</p> <p><i>Translation:</i></p> <p>Service requests will be transmitted to DCC via agreed market messages: it is assumed that these will be carried over a new messaging infrastructure operated by DCC. DCC will operate translation software supplied by meter manufacturers to translate these requests into the proprietary format used by the specified meter. Data received from meters will be translated back into standard market messages for onward transmission to service users.</p> <p><i>Scheduled data retrieval:</i></p> <p>Service users may submit to DCC a schedule of regular transactions (e.g. monthly meter reads) that DCC will execute. Service users may also submit 'diarised events' (e.g. to update tariffs on a specified date, to perform routine firmware upgrades) which DCC will execute in line with SLAs.</p> <p><i>Registration:</i></p> <p>DCC will be responsible for the industry's 'master data' for sites, meter points and registered suppliers/agents. For those sites covered by DCC's registration activities, modified change of supplier/tenancy and related processes will be developed. These processes will cover both gas and electricity, thus facilitating switching by dual-fuel customers.</p> <p><i>Network management:</i></p> <p>As part of its operational management, DCC will manage traffic to/from meters and to/from service users to as to optimise its use of comms networks: this may require it to 'buffer' data received from meters for onward transmission to service users. For example, data may be buffered until a confirmation has been received from the recipient. DCC will perform security monitoring to provide continual assurance of the integrity of the WAN.</p> <p><i>Reporting, invoicing and financial management:</i></p> <p>DCC will require a suite of 'internal' systems to allow it to manage its operations. These systems will include the preparation of service invoices and management information (e.g. to monitor performance against SLAs), and processing DCC financial transactions and administration. These systems may need to store certain transaction records to allow verification of its charges.</p>

Option 2 – Initial scope plus registration

<p>Source of supplier registration data</p>	<p>Option 2A: Sites with smart meters will be included in DCC's registration function. When a smart meter is installed, DCC will need to update the legacy registration system to show that a smart meter has been installed.</p>	<p>Option 2B: All sites will be included in DCC's registration function.</p>	<p>Option 2C: In the period until registration function is operational, registration data will be obtained from legacy systems as for Option 1. Once the DCC registration function is operation, all registration data will be held by DCC.</p>	<p>Option 2D: All sites will be included in DCC's registration function.</p>
<p>Change of Supplier / Tenancy arrangements</p>	<p>Option 2A: Sites with smart meters will be handled by the DCC's registration function and follow the new CoS/CoT processes. The existing CoS/CoT procedures will remain in operation for sites which do not have a smart meter. The legacy meter point record will need to identify that a smart meter has been installed (see above).</p>	<p>Option 2B: All sites will follow the new CoS/CoT processes for smart metering which will facilitate switching by dual fuel customers.</p>	<p>Option 2C: Initially as for Option 1. Once the DCC registration capability is operational, as per Option 2B.</p>	<p>Option 2D: All sites will follow the new CoS/CoT processes for smart metering which will facilitate switching by dual fuel customers.</p>
<p>New connections & disconnections</p>	<p>Option 2A: The existing procedures for issuing MPAN / MPRNs will remain broadly unchanged. When the smart meter is fitted, details will be loaded into the DCC's registration system and the legacy system will be updated to show that a smart meter has been installed.</p>	<p>Option 2B: A new process will be devised which allows network operators to manage interactions with developers and to issue MPAN / MPRNs. When the MPAN / MPRN is issued the DCC's registration system will need to be updated by the network operator and the smart meter details will be recorded in the DCC systems when it self-registers.</p>	<p>Option 2C: As for Option 1 until the DCC registration function is operational. Once it is operational then this will be the same as for Option 2B.</p>	<p>Option 2D: A new process will be devised which allows network operators to manage interactions with developers and to issue MPAN / MPRNs. When the MPAN / MPRN is issued the DCC's registration system will need to be updated by the network operator and the smart meter details will be recorded in the DCC systems when it self-registers.</p>

Option 2 – Initial scope plus registration

Settlements	The existing settlement procedures will remain broadly unchanged.				
Pay As You Go	DCC will support the PAYG services listed in the Services Catalogue. Suppliers will transmit PAYG messages to DCC and be responsible for recording whether a smart meter is operating in PAYG or credit mode: they will also be responsible for ensuring that PAYG messages (e.g.top-ups) are only sent to meters operating in PAYG mode.				
Metering agents	The 'supplier hub' principle will continue to apply with suppliers deciding whether to appoint third party agents or to perform activities through internal business units. Accordingly the DCC may receive service requests either from suppliers or their agents.				
Market messaging	<p>Option 2A: A new market messaging solution will be developed by DCC to handle all messages passed between DCC and service users. The existing market message systems (DTN & iX) will continue to be used for transactions relating to traditional meters until full migration, when the solution will be the same as Option 2B.</p>	<p>Option 2B: A new market messaging system will be developed by DCC to handle all messages passed between DCC and service users. The existing market message systems (DTN & iX) will continue in operation for legacy transaction flows (e.g. between suppliers and settlement organisations).</p>	<p>Option 2C: Initially as for Option 1. Once the DCC registration capability is operational, as per Option 2B.</p>	<p>Option 2D: A new market messaging system will be developed by DCC to handle all messages passed between DCC and service users. The existing market message systems (DTN & iX) will continue in operation for legacy transaction flows (e.g. between suppliers and settlement organisations).</p>	
Smart grid functions	<p>Services to be supported under this option will comprise:</p> <ul style="list-style-type: none"> Ad hoc power quality reads (single or aggregate values) Transfer of alarms to network operators 				
Industry data for which DCC will hold the master record	Data element	Option 2A	Option 2B	Option 2C	Option 2D
	Access control information (including type and level of access allowed to each organisation for each service and each meter and associated consent information)	Y	Y	Y	Y

Option 2 – Initial scope plus registration

	Message Log for all messages received/transmitted (and messages which fail authentication) excluding transaction data (e.g. meter readings)	Y	Y	Y	Y
	<p>Registration information</p> <ul style="list-style-type: none"> Spatial reference (including Universal Premises Reference Number and associated address) MPAN/SPN and associated standing data The registered supplier / shipper and its agents for each network exit point WAN communications module address information Device (including meter) identifiers Meter standing data Settlement details (e.g. profile class) Customer type (e.g. consumer, SME, vulnerable) 'Lead supplier' for the site (i.e. gas or electricity) 	SM only initially	All meters	All meters after transition	All meters
	<p>Device (including meter) details</p> <ul style="list-style-type: none"> addressing information manufacturer and type 	<p>All Smart Meters</p> <p>TBD: Other meters after transition</p>	<p>All Smart Meters</p> <p>TBD: Other meters</p>	<p>All Smart Meters after transition</p> <p>TBD: Other meters after transition</p>	<p>All Smart Meters</p> <p>TBD: Other meters</p>
Data Migration	<p>Option 2A: In this option there will be no mass migration of data to DCC at Go Live although a 'bulk load' facility may be required to handle the transfer of smart meter sites from an interim solution. Sites / devices will be transferred to</p>	<p>Option 2B: All sites will fall under DCC's scope of activities at DCC Go-Live. This may require data cleansing to be performed and systems / procedures to be developed by suppliers, network operators and others to keep their</p>	<p>Option 2C: Prior to DCC registration being operational, there will be no mass migration of data to DCC, although a 'bulk load' facility may be required to handle the transfer of smart meter sites from an interim solution. Sites</p>	<p>Option 2D: All sites will fall under DCC's scope of activities at DCC Go-Live. This may require data cleansing to be performed and systems / procedures to be developed by suppliers, network operators and others to keep their</p>	

Option 2 – Initial scope plus registration

	DCC as and when smart meters are installed (also see below re non-domestic sites). In [2018] a 'sweep up' migration will be needed to transfer all remaining sites (including unmetered and non-domestic sites) to the DCC registration system.	databases aligned with DCC. This approach may require a 'Big Bang' implementation with significant industry trialling to mitigate the risk of data conversion errors.	/ devices will be added to DCC's database as and when meters are installed. Once the DCC registration function is operational, this option will be the same as Option 2B.	databases aligned with DCC. This approach may require a 'Big Bang' implementation with significant industry trialling to mitigate the risk of data conversion errors.
Treatment of 'early smart' meters	Option 2A: 'Early smart' meters will have been recorded in the appropriate registration system at the time they were installed. An 'early smart' meter will only be transferred to DCC when it starts to communicate via DCC (rather than direct to the supplier). Only those 'early smart' meters which comply with the approved technical specification will be eligible for adoption by DCC.	Option 2B: 'Early smart' meters will have been recorded in the appropriate registration system at the time they were installed and these details will have been transferred to DCC. When the 'early smart' meter starts to communicate via DCC then its WAN comms address will be loaded into DCC's registration database and it will be treated as fully smart. Prior to this the DCC registration database will treat the meter as 'dumb'. Only those 'early smart' meters which comply with the approved technical specification will be eligible for adoption by DCC.	Option 2C: Prior to DCC registration being operational, 'Early smart' meters will have been recorded in the appropriate registration system at the time they were installed. An 'early smart' meter will only be entered into the DCC database when it starts to communicate via DCC (rather than direct to the supplier). Only those 'early smart' meters which comply with the approved technical specification will be eligible for adoption by DCC. Once DCC registration is operational, any 'early smart' meters will be migrated along with the traditional meters as above.	Option 2D: 'Early smart' meters will have been recorded in the appropriate registration system at the time they were installed and these details will have been transferred to DCC. When the 'early smart' meter starts to communicate via DCC then its WAN comms address will be loaded into DCC's registration database and it will be treated as fully smart. Prior to this the DCC registration database will treat the meter as 'dumb'. Only those 'early smart' meters which comply with the approved technical specification will be eligible for adoption by DCC.
Non-domestic customers	Option 2A: DCC will only act as the communication services provider for non-domestic customers if the supplier elects to use DCC. If the supplier uses DCC then the meter will be recorded in DCC's database.	Option 2B: DCC will only act as the communication services provider for non-domestic customers if the supplier elects to use DCC. DCC will be the sole provider of registration services and all suppliers will	Option 2C: Prior to the DCC registration function being operational, as described in Option 1 – i.e. DCC will only act as the communication services provider for non-domestic customers if the	Option 2D: DCC will only act as the communication services provider for non-domestic customers if the supplier elects to use DCC. DCC will be the sole provider of registration services and all suppliers will

Option 2 – Initial scope plus registration

	When all legacy meters are replaced by smart meters and other sites have been migrated then DCC will become the single registration agent for all sites.	be obliged (via licence condition) to use this service, regardless of whether or not they choose to use DCC's communications services.	supplier elects to use DCC. Once the DCC registration function is operational, this will be as for Option 2B.	be obliged (via licence condition) to use this service, regardless of whether or not they choose to use DCC's communications services.
Security standards	End to end security between the DCC and the communications module / smart meter is critical. In conjunction with the WAN Services Provider the DCC provider must ensure that appropriate security mechanisms are in place, inter-alia, to protect the confidentiality and integrity of information exchanged with suppliers, third parties, communications modules, meters and other devices within the premise; to authenticate the source of all messages received by the DCC and to ensure that messages issued by the DCC can be authenticated by any party that receives them.			
Other features	It should be noted that the DCC will need to support new market entities, such as ESCOs, as well as existing market entities.			

B.3: Option 3: Initial scope plus registration and data processing

Option 3 – Initial scope plus Registration and Data Processing

Overview

This option builds on Option 2 by adding data processing functions, so that the DCC functions include:

Electricity

- Registration
- Meter reading
- Data verification functions and the calculation of EAC/AA
- For Non Half-Hourly Meters: aggregation of consumption volumes to provide input data for settlement

Gas

- Registration
- Meter reading
- Data verification functions and the calculation of AQ/SOQ

With this option, by the end of the transition period, the DCC would act as:

- Meter Read Agency / Data Retriever for smart meters;
- Master Registration Authority for all meters (smart and traditional);
- For electricity: Data Collector for all smart meters;
- For gas: <<what is the correct term for the organisation that does data verification?>>.

Registration is defined as the process that maps a physical network exit point (i.e. MPAN or MPRN) to a metering system and to the registered supplier in the settlement system. The DCC will be responsible for:

- Initial registration of new sites (including against a new Site Identifier) and network exit points;
- For associating suppliers and metering systems with network exit points;
- For maintaining the accuracy of the data in the registration system;
- For making information in the registration system available to authorised parties.

A repository of all meters and the derived energy use values will be held for a period of up to 5 years. This should be accessible to all industry parties in accordance with the access control model.

Settlement processes will be unchanged.

Option 3 – Initial scope plus Registration and Data Processing

Sub options	<p>3A: Phased transition</p> <p>The initial DCC registration activities will cover smart meters sites only.</p> <p>Sites would only fall within DCC's scope when a smart meter is installed and legacy registration arrangements will continue to operate for sites with traditional meters.</p> <p>All legacy sites (including I&C and unmetered) will be migrated to DCC registration when a significant majority of domestic sites have smart meters (2018 TBC).</p>	<p>3B: Immediate transition</p> <p>DCC's registration activities would cover all sites from DCC Go Live.</p> <p>This would require a mass migration (and data cleansing) of registration data to DCC prior to DCC Go-Live and would require legacy processes (e.g. CoS/CoT) to be modified to follow streamlined CoS/CoT processes from that date.</p>	<p>3C: Delayed transition</p> <p>At go-live DCC would have no registration or data processing capabilities (i.e. the same as Option 1).</p> <p>After a period of time, perhaps 2-3 years, there would be a transition to full registration of all meters (smart and traditional).</p> <p>With this option the end state would be reached before Option 3A but later than Option 3B.</p>	<p>3D: Immediate transition with legacy support</p> <p>As option 3B with support for legacy data flows for initial period (to 2018 TBC)</p>
	<p>Data processing functions will be operational for smart meters from DCC Go-Live.</p> <p>Traditional meter data processing will remain outside the scope of DCC.</p>	<p>Data processing functions will be operational for smart meters from DCC Go-Live.</p> <p>Traditional meter data processing will remain outside the scope of DCC.</p>	<p>Data processing functions will be operational for smart meters after the transition</p> <p>Traditional meter data processing will remain outside the scope of DCC.</p>	<p>As for Option 3B with support for legacy data flows for initial period (to 2018 TBC)</p>
Services supported	All services listed in the Service Catalogue will be supported.			
DCC Activities	<p><i>Secure access control:</i></p> <p>Suppliers (and their agents), network operators and ESCOs will submit service requests which will be validated by DCC. Suppliers will be allowed to access meter points for which they are the registered supplier; agents will be allowed to access meter points for which the supplier has granted them access; network operators will be allowed to access meter points within their distribution areas; ESCOs will need authorisation from the customer to access a specified meter. Each type of service user will be restricted to a designated set</p>			

Option 3 – Initial scope plus Registration and Data Processing

of service requests (e.g. network operators will not be permitted to submit top-ups to a PAYG meter).

Translation:

Service requests will be transmitted to DCC via agreed market messages: it is assumed that these will be carried over a new messaging infrastructure operated by DCC. DCC will operate translation software supplied by meter manufacturers to translate these requests into the proprietary format used by the specified meter. Data received from meters will be translated back into standard market messages for onward transmission to service users.

Scheduled data retrieval:

Service users may submit to DCC a schedule of regular transactions (e.g. monthly meter reads) that DCC will execute. Service users may also submit 'diarised events' (e.g. to update tariffs on a specified date, to perform routine firmware upgrades) which DCC will execute in line with SLAs.

Registration:

DCC will be responsible for the industry's 'master data' for sites, meter points and registered suppliers/agents. For those sites covered by DCC's registration activities, modified change of supplier/tenancy and related processes will be developed. These processes will cover both gas and electricity, thus facilitating switching by dual-fuel customers.

Data processing:

The DCC will maintain a repository of read information, together with such other information as is required to enable data verification and subsequent data aggregation processing to be undertaken.

Network management:

As part of its operational management, DCC will manage traffic to/from meters and to/from service users to as to optimise its use of comms networks: this may require it to 'buffer' data received from meters for onward transmission to service users. For example, data may be buffered until a confirmation has been received from the recipient. DCC will perform security monitoring to provide continual assurance of the integrity of the WAN.

Reporting, invoicing and financial management:

DCC will require a suite of 'internal' systems to allow it to manage its operations. These systems will include the preparation of service invoices and management information (e.g. to monitor performance against SLAs), and processing DCC financial transactions and administration. These systems may need to store certain transaction records to allow verification of its charges.

Source of supplier registration	<p>Option 3A</p> <p>Sites with smart meters will</p>	<p>Option 3B</p> <p>All sites will be included in</p>	<p>Option 3C</p> <p>In the period until registration</p>	<p>Option 3D</p> <p>All sites will be included in</p>
---------------------------------	---	--	---	--

Option 3 – Initial scope plus Registration and Data Processing

<p>data</p>	<p>initially be included in DCC’s registration function.</p> <p>When a smart meter is installed, DCC will need to update the legacy registration system to show that a smart meter has been installed.</p> <p>All legacy sites (including I&C and unmetered) will be migrated to DCC registration when a significant majority of domestic sites have smart meters (2018 TBC).</p>	<p>DCC’s registration function.</p>	<p>function is operational, registration data will be obtained from legacy systems as for Option 1.</p> <p>Once the DCC registration function is operation, all registration data will be held by DCC.</p>	<p>DCC’s registration function.</p>
<p>Change of Supplier / Tenancy arrangements</p>	<p>Option 3A</p> <p>Sites with smart meters will be handled by the DCC’s registration function and follow the new CoS/CoT processes. The existing CoS/CoT procedures will remain in operation for sites which do not have a smart meter. The legacy meter point record will need to identify that a smart meter has been installed (see above).</p>	<p>Option 3B</p> <p>All sites will follow the new CoS/CoT processes for smart metering which will facilitate switching by dual fuel customers.</p>	<p>Option 3C</p> <p>Initially as for Option 1.</p> <p>Once the DCC registration capability is operational, as per Option 3B.</p>	<p>Option 3D</p> <p>All sites will follow the new CoS/CoT processes for smart metering which will facilitate switching by dual fuel customers.</p>
<p>New connections / disconnections</p>	<p>Option 3A</p> <p>The existing procedures for issuing MPAN / MPRNs will remain broadly unchanged. When the smart meter is fitted, details will be loaded into the</p>	<p>Option 3B</p> <p>A new process will be devised which allows network operators to manage interactions with developers and to issue MPAN /</p>	<p>Option 3C</p> <p>As for Option 1 until the DCC registration and data processing functions are operational.</p>	<p>Option 3D</p> <p>As option 3B.</p>

Option 3 - Initial scope plus Registration and Data Processing

	DCC's registration system and the legacy system will be updated to show that a smart meter has been installed.	MPRNs. When the MPAN/MPRN is issued the DCC's registration system will need to be updated by the network operator and the smart meter details will be recorded in the DCC systems when it self-registers.	Once operational this will be the same as for Option 3B.	
Settlements	For electricity the DCC will act as a data aggregator and provide aggregated data to the settlement agencies. For gas the DCC will calculate energy use values from the meter reads. Settlement processes will be broadly unchanged.			
Pay As You Go	DCC will support the PAYG services listed in the Services Catalogue. Suppliers will transmit PAYG messages to DCC and be responsible for recording whether a smart meter is operating in PAYG or credit mode: they will also be responsible for ensuring that PAYG messages (e.g. top-ups) are only sent to meters operating in PAYG mode.			
Metering agents	The 'supplier hub' principle will continue to apply with suppliers deciding whether to appoint third party agents or to perform activities through internal business units. Accordingly the DCC may receive service requests either from suppliers or their agents.			
Market messaging	<p>Option 3A</p> <p>A new market messaging solution will be developed by DCC to handle all messages passed between DCC and service users. The existing market message systems (DTN & iX) will continue to be used for transactions relating to traditional meters until full migration, when the solution will be the same as Option 2B.</p>	<p>Option 3B</p> <p>A new market messaging system will be developed by DCC to handle all messages passed between DCC and service users. The existing market message systems (DTN & iX) will continue in operation for legacy transaction flows (e.g. between suppliers and settlement organisations).</p>	<p>Option 3C</p> <p>Initially as for Option 1. Once the DCC registration capability is operational, as per Option 3B.</p>	<p>Option 3D</p> <p>As for option 3B.</p>

Option 3 - Initial scope plus Registration and Data Processing

Smart grid functions	Services to be supported under this option will comprise: <ul style="list-style-type: none"> • Ad hoc power quality reads (single or aggregate values) • Transfer of alarms to network operators 				
Industry data for which DCC will hold the master record	Data element	Option 3A	Option 3B	Option 3C	Option 3D
	Access control information (including type and level of access allowed to each organisation for each service and each meter and associated consent information)	Y	Y	Y	Y
	Message Log for all messages received/transmitted (and messages which fail authentication) excluding transaction data (e.g. meter readings)	Y	Y	Y	Y
	Registration information <ul style="list-style-type: none"> • Spatial reference (including Universal Premises Reference Number and associated address) • MPAN/SPN and associated standing data • Registered supplier / shipper and its agents for each network exit point • WAN communications module address information • Device (including meter) identifiers • Meter standing data • Settlement details (e.g. profile class) • Customer type (e.g. consumer, SME, vulnerable) • 'Lead supplier' for the site (i.e. gas or electricity) 	SM only initially	All meters	All meters after transition	All meters

Option 3 - Initial scope plus Registration and Data Processing

	Device (including meter) details <ul style="list-style-type: none"> addressing information manufacturer and type 	All Smart Meters TBD: Other meters after transition	All Smart Meters TBD: Other meters	All Smart Meters after transition TBD: Other meters after transition	All Smart Meters TBD: Other meters
	Meter readings	All Smart Meters	All Smart Meters	All Smart Meters	All Smart Meters
	Calculated Energy use values	All Smart Meters	All Smart Meters	All Smart Meters	All Smart Meters
Data Migration	<p>Option 3A</p> <p>There will be no mass migration of data to DCC at Go-Live although a 'bulk load' facility may be required to handle the transfer of smart meter sites from an interim solution.</p> <p>Sites / devices will be transferred to DCC as and when smart meters are installed (also see below re non-domestic sites).</p> <p>In 2018 (TBC) a 'sweep up' migration will be needed to transfer all remaining sites (including unmetered and non-domestic sites) to the DCC registration system.</p>	<p>Option 3B</p> <p>All sites will fall under DCC's scope of activities at DCC Go-Live. This may require data cleansing to be performed and systems / procedures to be developed by suppliers, network operators and others to keep their databases aligned with DCC. This approach may require a 'Big Bang' implementation with significant industry trialling to mitigate the risk of data conversion errors.</p>	<p>Option 3C</p> <p>Prior to DCC registration being operational, there will be no mass migration of data to DCC, although a 'bulk load' facility may be required to handle the transfer of smart meter sites from an interim solution. Sites / devices will be added to DCC's database as and when meters are installed. Once the DCC registration function is operational, this option will be the same as Option 2B.</p>	<p>Option 3D</p> <p>As for 3B</p>	

Option 3 – Initial scope plus Registration and Data Processing

<p>Treatment of 'early smart' meters</p>	<p>Option 3A</p> <p>'Early smart' meters will have been recorded in the appropriate registration system at the time they were installed. An 'early smart' meter will only be transferred to DCC when it starts to communicate via DCC (rather than direct to the supplier). Only those 'early smart' meters which comply with the approved technical specification will be eligible for adoption by DCC.</p>	<p>Option 3B</p> <p>'Early smart' meters will have been recorded in the appropriate registration system at the time they were installed and these details will have been transferred to DCC. When the 'early smart' meter starts to communicate via DCC then its WAN communications address will be loaded into DCC's registration database and it will be treated as fully smart. Prior to this the DCC registration database will treat the meter as 'dumb'. Only those 'early smart' meters which comply with the approved technical specification will be eligible for adoption by DCC.</p>	<p>Option 3C</p> <p>Prior to DCC registration being operational, 'Early smart' meters will have been recorded in the appropriate registration system at the time they were installed. An 'early smart' meter will only be entered into the DCC database when it starts to communicate via DCC (rather than direct to the supplier). Only those 'early smart' meters which comply with the approved technical specification will be eligible for adoption by DCC. Once DCC registration is operational, any 'early smart' meters will be migrated along with the traditional meters as above.</p>	<p>Option 3D</p> <p>As for 3B</p>
<p>Non-domestic customers</p>	<p>Option 3A</p> <p>DCC will only act as the communication services provider for non-domestic customers if the supplier elects to use DCC.</p> <p>If the supplier uses DCC then the meter will be recorded in DCC's database. When all legacy meters are replaced by smart meters and other sites have been migrated then DCC</p>	<p>Option 3B</p> <p>DCC will only act as the communication services provider for non-domestic customers if the supplier elects to use DCC.</p> <p>DCC will be the sole provider of registration services and all suppliers will be obliged (via licence condition) to use this service, regardless of whether or not they choose to use</p>	<p>Option 3C</p> <p>Prior to the DCC registration function being operational, as described in Option 1 – i.e. DCC will only act as the communication services provider for non-domestic customers if the supplier elects to use DCC. Once the DCC registration function is operational, this will be as for Option 3B.</p>	<p>Option 3D</p> <p>As for 3B</p>

Option 3 – Initial scope plus Registration and Data Processing

	<p>will become the single registration agent for all sites.</p> <p>Non-domestic customers which opt to use DCC WAN services may chose to use DCC data processing capabilities if it is technically feasible to do so.</p>	<p>DCC's communications services.</p> <p>Non-domestic customers which opt to use DCC WAN services may chose to use DCC data processing capabilities if it is technically feasible to do so.</p>		
Security standards	<p>End to end security between the DCC and the communications module / smart meter is critical. In conjunction with the WAN Services Provider the DCC provider must ensure that appropriate security mechanisms are in place, inter-alia, to protect the confidentiality and integrity of information exchanged with suppliers, third parties, communications modules, meters and other devices within the premise; to authenticate the source of all messages received by the DCC and to ensure that messages issued by the DCC can be authenticated by any party that receives them.</p>			
Other features	<p>It should be noted that the DCC will need to support new market entities, such as ESCOs, as well as existing market entities.</p> <p>For the calculation of data storage requirements it should be assumed that 48 electricity readings will be recorded for each electricity meter every day and that up to five years readings must be held, as well as the associated derived information. For gas it should be assumed that one reading will be taken per day per meter and held for up to five years.</p>			

DRAFT